



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,723	10/01/2001	Kazuhiko Koike	461-30	3620

7590 11/13/2003

NIXON & VANDERHYE P.C.

8th Floor  
1100 North Glebe Road  
Arlington, VA 22201

EXAMINER

WRIGHT, WILLIAM G

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 11/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/966,723

Applicant(s)

KOIKE ET AL.

Examiner

William G. Wright SR.

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit 1754

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 11, 20, 21, 25 and 31 are rejected under 35 U.S.C. § 102(b) as being anticipated by Farrauto '360.

The claimed cell structure and gas flow passages of the instant invention are found in the reference.

The applicants argue that the reference to Farrauto teaches a ceramic carrier with a coating applied to the surface of the carrier. The catalyst component is then argued to be supported on the surface of the coating.

The coating is taught to be the catalyst material itself at column 2 line 12 et seq. and at column 13 line 14 et seq. and at claim 17. Claim 13 of the reference teaches that the walls of the channels are in fact coated by the catalytic material. It is not disclosed how this would differ from the catalytic material being deposited on the support at any other location other than the walls of the channels. It is felt that the catalyst would react the same way on the walls of the channels as the catalyst material would react on the support surface at any other

Art Unit 1754

location. The coating argument as presented by applicants are not persuasive.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicants are advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103(a).

Claims 1-41 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Strehlau et al. '904 or Farrauto et al. '360.

Strehlau et al. '904 discloses catalysts on carriers with flow channels, noted cell density, coating on the walls and the claimed pitch features in an irregular array of a honeycomb support. Note Strehlau at column 2 for flow channels and at claim 24 for a coating being on the walls of the flow channels. Strehlau differs from the claimed invention in the lack of the disclosure of the pitch of the cells and the use of the corrugated surface. Strehlau does disclose at column 1 line 62 - column 2 line 4 the relationship of the flow axis of the cells and how the cells are found in a regular array over the cross-section of a honeycomb structure, thus reading on a pitch for the flow channels which produce a shaped surface (e.g. of corrugations). The use of a corrugated surface, as is known in the art, is derived from Strehlau at column 7 line 61 et seq. Farrauto et al. '360 discloses catalysts on a carrier (cordierite column 2 line 64), noted cell density and flow passages at column 4, and coating on the walls of the cell in claim 13. For cross-sectional shape note column 8 line 66, and column 9 line 1 et seq. for a corrugated surface with an amplitude of the corrugations. Here alternating layers of flat and wave form plates of a suitable material are noted. Farrauto et al. '360 lacks the disclosure for the pitch of the cells. However the

Art Unit 1754

pitch of the cells can be derived from the gas flow passages being defined at column 8 line 65 - column 9 line 4.

The applicants argue that there is a coating on the surface of the ceramic and that the catalyst is supported on the surface of the coating. The teaching of the catalyst being on the carrier is found at Strehlau column 2 line 12 et seq. and column 13 line 14 et seq. and at claim 17. Thus the catalytic components are directly on the carrier and not on a coating material between the carrier and the catalyst material. The applicants argue that the Strehlau reference teaches a catalyst on a coating at claim 24. What claim 24 teaches is a mixture of catalysts applied to a carrier, thus resulting in the application of catalytic material directly to the carrier as is required by the instant claims. The applicants argue that the Examiner admits that Farrauto discloses a coating on the walls of the cells in claim 13. This argument is not well taken as claim 13 teaches a catalyst on the wall of a carrier with no coating in between. The coating in both references is the catalyst substance and thus meets the claimed requirements of the catalyst being directly on the carrier. The pitch of the cells is considered to be taught from the gas flow passages no matter how said passages are altered by the reference.

Claims 1-41 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Strehlau et al. '904 or Farrauto et al. '360 each in view of Patent Abstracts of Japan 6200441A to Yamada Shunichi et al.

Strehlau et al. '904 discloses catalysts on carriers with flow channels, noted cell density, coating on the walls and the claimed pitch features in an irregular array of a honeycomb support. Note Strehlau at column 2 for flow channels and at claim 24 for a coating being on the walls of the flow channels. Strehlau differs from the claimed invention in the lack of the disclosure of the pitch of the cells, and the use of a corrugated surface. Strehlau does disclose at column 1 line 62 - column 2 line 4 the relationship of the flow axis of the cells and how the cells are found in irregular array over the cross-section of a honeycomb structure, thus reading on a pitch for the flow channels which may produce a shaped surface (e.g. corrugations). The use of a corrugated surface as is well known in the art is derived from Strehlau at column 7 line 16 et seq. Farrauto et al. '360 discloses catalysts on a carrier (cordierite column 2 line 64), noted cell density and flow passages at column 4 and coating on the walls of the cells in claim 13. For cross-sectional shape note column 8 line 66 and column 9 line 1 et seq. for a corrugated surface with an amplitude of the corrugations.

Here alternating layers of flat and wave form plates of a suitable material are noted.

Yamada Shunichi '441 teaches in detail the claimed parameters of defects, d and f orbits, microcracks and substituting of elements in the carrier or substrate. These teachings are found in the 103 claims of the supporting reference. The supporting reference is directed to the production of a ceramic catalyst carrier as are the two primary references, each taken in the alternative with the secondary reference.

Farrauto et al. '360 lacks the disclosure for the pitch of the cells, however the pitch of the cells can be derived from the gas flow passage being defined at column 8 line 65 - column 9 line 4. Strehlau and Farrauto each lack the specific disclosures of the instant claims as to defects, d and f orbits, microcracks and substituting of elements in the carrier or substrate.

All of the references are to the production of ceramic catalyst carrier. Each shows a catalyst carrier for use in the autogas exhaust treatment area. The motivation to increase and improve reactant and catalyst exposure or contact is sufficient to require a practitioner to use the teachings of the supporting reference in either of the primary references. The crux of the effort being present in the instant claims is that the reactants require contact with the catalysts in a very particular manner



and a catalyst practitioner should be motivated to provide such contact by any means available to include the many parameters taught in the instant claims. This desire to get the reactants and catalysts together in the particular environment needed for the specific reaction to occur as desired leads a practitioner to use the features of the supporting reference to disclose the instant claimed invention to be obvious.

Applicants' arguments filed September 5, 2003, Paper No. 6 have been fully considered but they are not deemed to be persuasive.

The non-persuasiveness of the applicants' arguments is addressed under each of the foregoing rejections.

A new reference is applied and the applicants have not amended their claims to require such, so this Office action is non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William G. Wright, Sr. whose telephone number is (703) 305-7792. The examiner can normally be reached on Monday through Thursday from 6:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on (703) 308-3837. The fax phone number for the

Serial No. 09/966,723

Art Unit 1754

organization where this application or proceeding is assigned are (703) 872-9306 for the regular communications and (703) 872-9311 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1495.



W. G. Wright, Sr.:cdc

November 6, 2003



**STEVEN BOS  
PRIMARY EXAMINER  
GROUP 1100**